



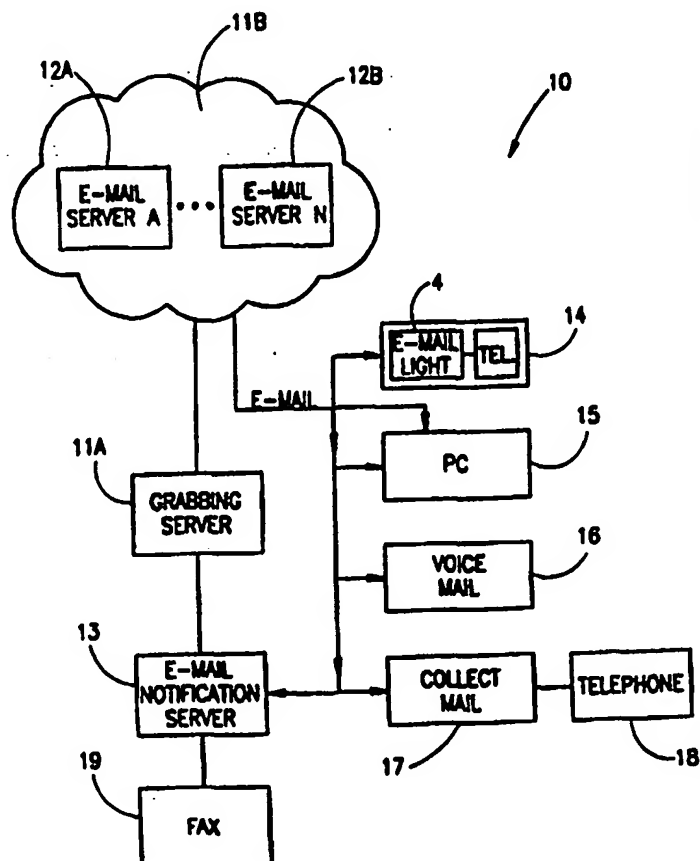
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| (21) International Application Number: PCT/IL98/00020 (22) International Filing Date: 15 January 1998 (15.01.98) (30) Priority Data: 120023 16 January 1997 (16.01.97) IL (71) Applicant (for all designated States except US): N.E.C.S. NEW E-MAIL COMMUNICATION SYSTEMS LTD. [IL/IL]; Hagalim Road 41, Industrial Zone, 46725 Herzeliya (IL). (72) Inventors; and (75) Inventors/Applicants (for US only): AMIT, Noah [IL/IL]; Deyisraeli 20 A, 34333 Haifa (IL). AMIT, Yonatan [IL/IL]; Deyisraeli 20 A, 34333 Haifa (IL). EDAN, Zvika [IL/IL]; Hagolan 20, 70600 Yavne (IL). (74) Agent: REINHOLD COHN AND PARTNERS; P.O. Box 4060, 61040 Tel Aviv (IL). | | | (81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments. |

(54) Title: E-MAIL NOTIFICATION SYSTEM

(57) Abstract

A notification method for notifying of an existence of at least one new e-mail message addressed to a subscriber, including providing to the subscriber, through the telephone network, notification on the existence of at least one new e-mail message, substantially at no cost to the subscriber and to the notification server.



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E-MAIL NOTIFICATION SYSTEM

FIELD OF THE INVENTION

The present invention is generally in the field of electronic mailing and relates to computerized systems designed to obtain information on e-mail messages. The present invention provides a system and method for obtaining such information.

BACKGROUND OF THE INVENTION

The very large increase and the wide circulation of the use of e-mail messaging, gave to an urgent need to develop systems to advise e-mail subscribers on receipt of e-mail messages. Thus, various notification systems have been developed, such as that disclosed in European Patent Application No. 736989. In addition to the above-mentioned document, other documents which can reflect the current state of the art include Dutch Patent No. 1,004,167, U.S. Patent No. 4,935,954 and U.S. Patent No. 5,293,250.

The present invention provides a system and method for obtaining such information and to notify the same to subscribers.

GENERAL DESCRIPTION OF THE INVENTION

The invention provides for a notification system for notifying of an existence of at least one new email message addressed to a subscriber, comprising:

at least one notification server coupled to a telephone network and capable, in response to said at least one new email message, of invoking a sequence of at least one cycle; each cycle including placement of a telephone call having at least one ring to a telephone terminal associated with the subscriber and disconnection of said call before bi-directional communication is established between said notification server and said telephone terminal; an indication unit, coupled to said telephone terminal and to the telephone network, the unit being adapted to identify said sequence and in response thereto to provide either or both of visual and audio indication signifying the existence of at least one new message.

The invention further provides in a notification system for notifying of an existence of at least one new email message addressed to a subscriber,

at least one notification server coupled to a telephone network and capable, in response to said at least one new email message, of invoking a sequence of at least one cycle; each cycle including placement of a telephone call to a telephone terminal associated with the subscriber and disconnection of said call before bi-directional communication is established between said notification server and said telephone terminal.

Still further the invention provides for in a notification system that includes at least one notification server for notifying of an existence of at least one new email message addressed to a subscriber,

an indication unit, coupled to a telephone terminal that is associated with a subscriber, and to a telephone network; the unit being adapted to identify a sequence of at least one cycle; each cycle including placement of a telephone call to the telephone terminal and disconnection of said call before bi-directional communication is established between said notification server and said telephone terminal; said unit is adapted in response to said sequence provide either or both of visual and audio indication signifying the existence of at least one new message.

Yet still further the invention provides for a notification system for notifying of an existence of at least one new email message addressed to a subscriber, comprising:

at least one notification server coupled to a telephone network and capable, in response to said at least one new email message, of providing to said subscriber, through said telephone network, notification on the existence of at least one new email message, substantially at no cost to said subscriber and to said notification server.

The invention still further provides for a notification method for notifying of an existence of at least one new e-mail message addressed to a subscriber:

(i) invoking a sequence of at least one cycle; each cycle including placement of a telephone call having at least one ring to a telephone terminal associated with the subscriber and disconnecting of said call before bi-directional communication is established between said notification server and said telephone terminal; and

(ii) identifying said sequence and in response thereto to provide either or both of visual and audio indication signifying the existence of at least one new message.

Still further the invention provides for a method for notifying of an existence of at least one new e-mail message addressed to a subscriber, including providing to said subscriber, through said telephone network, notification on the existence of at least one new e-mail message, substantially at no cost to said subscriber and to said notification server.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be understood and appreciated more fully from the following detailed description taken in conjunction with the appending drawings, in which:

Fig. 1 is a schematic illustration of an e-mail notification system according to one embodiment of the present invention;

Fig. 2 is a schematic illustration of a database employed by an e-mail notification system according to one embodiment of the invention;

Fig. 3 is a flow chart illustrating a generalized e-mail notification sequence according to one embodiment of the present invention;

Fig. 4 is a flow chart illustrating the step of notifying a subscriber on receipt of a new e-mail message according to one embodiment of the invention;

Fig. 5 is a flow chart illustrating additional manner of notifying a subscriber on the receipt of new e-mail message;

Fig. 6 is a flow chart illustrating communication initiated by the subscriber with the notification server according to the embodiment of Fig. 5;

Fig. 7 is a schematic block diagram of a notification system which serves as an additional means for notifying the subscriber on the receipt of a new e-mail message; and

Fig. 8 is a flow chart illustrating the manner of notifying the subscriber on the receipt of a new e-mail message according to the embodiment of Fig. 7.

DETAILED DESCRIPTION OF THE INVENTION

Attention is first drawn to Fig. 1 showing a schematic block diagram of a notification system according to one embodiment of the invention. The system 10 includes a notification server 13 which is capable of receiving information as to new e-mail messages which are addressed to subscribers. The e-mail information is stored, e.g. in a grabbing server 11A which had obtained the information from a plurality of e-mail servers 12A-12N. One possible manner of grabbing the new e-mail information is described in Applicant's co-pending PCT application filed concurrently with the present PCT application. The contents of the co-pending PCT application is incorporated herein by reference. It should be noted, however, that the manner in which information as to new e-mail messages is conveyed to the e-mail

notification server 13 is, by no means, bound by that described in the specified co-pending PCT application.

The notification server 13 may be a standard PC, or any other computer (or network of computers), all as known *per se*. Fig. 1 shows various manners of informing subscribers on the existence of a new e-mail message. In this connection, attention is particularly drawn to block 14 which illustrates one possible realization of an important feature of the present invention. According to the latter feature, the e-mail notification server provides the e-mail subscriber with an audio and/or visual indication which signifies that a new e-mail message (or messages) is (are) received, e.g. by means of light device 4 which when illuminated indicates on the receipt of new e-mail messages for this particular subscriber.

Turning now to Fig. 2, there is shown a typical, yet not exclusive, example of a database 20 utilized by the notification server which database holding fields 27, 28 and 29 standing for rule based filter, notification receipt details and time of last notification, respectively. It should be noted that the specified database is, by no means, bound to any specific realization and of course the fields depicted in Fig. 2 may be modified, and/or others may be added all as required and appropriate. The specified database may hold, together with said user notification information record (22) also user grabbing information record (21) that by this particular embodiment, having various fields (not shown in Fig. 2) for use by grabbing server 11A. The utilization of the database 20 will be better understood with reference to Figs. 3-9 below.

Generally speaking, the server 13 searches database 20, and in response to the indication on new e-mail messages notifies subscribers that they have received new e-mail messages. More specifically, in step 61 server 13 searches database 20 for entries which indicate that new e-mail messages (that have not, as yet, been notified to subscriber) are available and to this end various fields in the database are accessed including fields in user grabbing information record 21 (not shown) as well as field 29 which indicates the time

of last notification. If, indeed, new e-mail messages have been received, then according to step 62, the relevant information as to the subscriber's identity (as specified in field 28) are extracted, e.g. the subscriber's telephone number. In step 63 server 13 notifies the subscriber on the existence of new e-mail message using said telephone number. Thereafter, in step 64, the database is updated on the time of last notification, as a preparatory step for the next cycle of operation.

Turning now to Fig. 4, there is shown one non-limiting variant of notifying the existence of new e-mail message to a subscriber. More specifically, in step 71 server 13 dials the subscriber's telephone number and is configured to have a short time delay of x milliseconds (e.g. less than 500 milliseconds) as indicated by step 72. Next, server 13 hangs up (step 73). Thus, a telephone call of one ring (of x-long milliseconds long) is placed on line to the subscriber. At the subscriber's end, the telephone rings (by this particular embodiment only once – step 74). In step 75, the unit that is coupled to the subscriber's telephone terminal identifies the specified sequence (which by this particular embodiment includes only one ring of x milliseconds long) and in response thereto it activates visual and/or audio indication which signifies that a new e-mail message has been received. Such an indication may be e.g. by way of continuous light, blinking light, and/or activating buzzer, etc. (step 75 and 76). The user is provided, of course, with known *per se* means for resetting the light upon noticing the visual and/or audio indication thereby enabling the next notification sequence.

Those versed in the art will readily appreciate that the specified sequence of one ring of e.g. 500 milliseconds long followed by hang up is only one out of many possible variants of notifying the user. Thus, by way of non-limiting example, a notification sequence may be two cycles each of which constitutes for an unanswered telephone call of respective x, and y rings, each ring being of the same (or e.g. if desired, different) length and the calls are separated by a predetermined time delay. The number of calls, the number of

rings in a call, the length of the respective rings, delay between calls, are all being parameters that are set, depending upon the particular application.

Of course, in response to the receipt of the notification, the user can access his/her e-mail box in a conventional manner and review the e-mail message. "*E-mail message*" should be construed in the context of the specification and claims in a broad manner as encompassing also, e.g. a chat notification. If desired, by way of non-limiting example, a first notification sequence signifies an e-mail message of conventional type (with first light and/or buzz indication), whereas second notification sequence signifies an e-mail message of chat type (with a second light and/or buzz indication). Other variants are, of course, available.

If desired, database 20 may employ additional information such as clients' preconfigured rule based filter 27 which enables to filter out e-mail messages that are not of interest and/or such which are of particular importance. Thus for example, the rule based filter may specify senders whose e-mail message should be notified to the subscriber and in addition or alternatively may specify senders whose e-mail messages are not of interest and therefore may be discarded. By way of another, non limiting example, the user may specify key words of interest which when appearing at the "*subject*" field of the so grabbed e-mail message, signify that the e-mail under consideration should be notified or, alternatively, be discarded all as stipulated in the specified field 27. Field 27 represents thus, a logic rule based filter which should be construed broadly in the sense that it is not limited to any specific criterion or given physical realization. Thus, for example, in reality, rule base filter 27 may include more fields and represents simple and/or complex criteria for notifying or discarding grabbed new e-mail messages, prescribe the time that information should be notified to subscriber, etc. The rule based filter uses, of course, stored information such as, for example, the sender's name and the subject of the e-mail message, if available, which latter information is held at the grabbing information record.

It will be appreciated that the manner type of notifying the users as described, e.g. with reference to Fig. 4, is very cost effective since the notification of new e-mail message(s) is conveyed whilst avoiding establishment of bi-directional communication and consequently also the change due to establishment of such bi-directional communication. Taking into account that the notification system of the invention aims at serving multitude subscribers and that at least for some of them new e-mail messages arrive quite frequently, the overall saving of communication costs is significant

Attention is now directed to Fig. 5, showing additional manner of notifying subscriber. Thus, server 13 dials to a collect call central office (17 in Fig. 1) as indicated by step 81. In step 82, server 13 provides central office 17 with pertaining details to a conventional collect call, i.e. its identity which may be e-mail and the telephone number of the subscriber retrieved from notification receipt details (28 in Fig. 2).

Next, central office 17 dials recipient telephone 18 and requests the subscriber to accept a collect call from "*e-mail*". The recipient may refuse to accept the call as indicated by block 84 in which case he/she becomes aware of the fact that there exist new e-mail messages. The notification ends in this case at step 85 since central office 17 indicates refusal of acceptance to server 13 and the call terminates.

In the alternative, the recipient accepts the collect call from e-mail as indicated by block 86 in which case a bi-directional connection to server 13 is established which allows the subscriber to view the entire contents of the e-mail message. It is assumed that, normally, the subscriber does not accept the call and thereafter links his/her e-mail system to inquire as to the contents of the received new e-mails.

Attention is now drawn to Fig. 6 showing a flow chart illustrating communication initiated by the subscriber with the notification server according to the embodiment of Fig. 5.

In step 91, the e-mail notification recipient calls server 13 to gain bi-directional communication. For example, if the subscriber is away from office and calls his/her telephone to check the voice mail box in order to ascertain the existence of new voice mail messages (block 16 in Fig. 1).

In step 92, server 13 verifies that the caller is indeed the e-mail subscriber. This can be done utilizing any suitable method known in the art such as requesting the caller to identify his password as stored in database 20 (not shown). Once the identification is completed, the subscriber gains bi-directional communication with server 13 as indicated by block 93 and may now enter his/her requests, a non limiting example being receiving the e-mail message itself via the facsimile machine 19.

It would be appreciated that in the embodiments of Figs. 4, 5 and 6, the subscriber's telephone may be a conventional telephone or a cellular phone to which server 13 calls directly.

In an alternative system, described now with reference to Fig. 7, server 13 is connected to a cellular phone company main computer for providing e-mail notifications to the cellular company subscribers via the messaging system of the cellular company itself.

It will also be appreciated that while Fig. 7 is described with respect to a cellular phone company it is equally applicable to a paging company.

In the system of Fig. 7, generally referenced 100, elements similar to Fig. 1 are referenced by the same reference numerals. In system 100, server 13 is connected to the cellular telephone company main computer 101 via a dedicated line so as to establish continuous connected therebetween. Notifications regarding e-mail messages are indicated to computer 101 which employs his functionalities to indicate same to recipient having cellular phone 103, for example using the text notification system many cellular telephone companies provide.

In one embodiment, the e-mail notification server is stored in the cellular phone as an unidentified call so as to receive the e-mail notification each time a call from the e-mail notification server is received.

In operation, described with reference to Fig. 8, server 11 is operative as described above and provides server 13 with indication of an e-mail message. Server 13 searches in the subscriber's notification receipt details (28 of Fig. 2) for the cellular telephone company (step 111) and if the subscriber required to be notified through his cellular telephone company, server 13 transmits an indication to the cellular telephone company computer 101 (step 112) which in turn transmits same to the recipient via his cellular telephone 103 (step 113). Server 13 also updates the time of last notification as indicated by 114 and described hereinabove with respect to Fig. 3.

It will be appreciated by persons skilled in the art that the present invention is not limited to what has been particularly shown and described hereinabove. Rather, the scope of the present invention is defined only by the claims that follow:

CLAIMS:

1. A notification system for notifying of an existence of at least one new email message addressed to a subscriber, comprising:

at least one notification server coupled to a telephone network and capable, in response to said at least one new email message, of invoking a sequence of at least one cycle; each cycle including placement of a telephone call having at least one ring to a telephone terminal associated with the subscriber and disconnection of said call before bi-directional communication is established between said notification server and said telephone terminal;

an indication unit, coupled to said telephone terminal and to the telephone network, the unit being adapted to identify said sequence and in response thereto to provide either or both of visual and audio indication signifying the existence of at least one new message.

2. A system according to Claim 1, wherein said sequence including two cycles separated by a predetermined time delay; each cycle includes placement of a telephone call having one ring and disconnection of said call before bi-directional communication is established between said notification server and said telephone terminal.

3. In a notification system for notifying of an existence of at least one new email message addressed to a subscriber,

at least one notification server coupled to a telephone network and capable, in response to said at least one new email message, of invoking a sequence of at least one cycle; each cycle including placement of a telephone call to a telephone terminal associated with the subscriber and disconnection of said call before bi-directional communication is established between said notification server and said telephone terminal.

4. In a notification system that includes at least one notification server for notifying of an existence of at least one new email message addressed to a subscriber,

an indication unit, coupled to a telephone terminal that is associated with a subscriber, and to a telephone network; the unit being adapted to identify a sequence of at least one cycle; each cycle including placement of a telephone call to the telephone terminal and disconnection of said call before bi-directional communication is established between said notification server and said telephone terminal; said unit is adapted in response to said sequence provide either or both of visual and audio indication signifying the existence of at least one new message.

5. A system according to Claim 4, wherein said sequence including two cycles separated by a predetermined time delay; each cycle includes placement of a telephone call having one ring and disconnection of said call before bi-directional communication is established between said notification server and said telephone terminal.

6. A notification system for notifying of an existence of at least one new email message addressed to a subscriber, comprising:

at least one notification server coupled to a telephone network and capable, in response to said at least one new email message, of providing to said subscriber, through said telephone network, notification on the existence of at least one new email message, substantially at no cost to said subscriber and to said notification server.

7. A system according to Claim 1, wherein said notification server is operated to notify said subscriber via an automatic collect call central office which calls said subscriber with a request from the subscriber to accept a collect call including said notification.

8. A system according to Claim 1, wherein said e-mail notification server is operated to notify said subscriber via cellular telephone company computer which provides said subscriber a notification by means of cellular telephone associated with said subscriber.

9. A system according to Claim 1, wherein said server is capable of notifying said subscriber by means of facsimile machine.

10. A system according to Claim 1, wherein said notification server is operated to notify said recipient via a paging company computer which provides said recipient a notification on his pager.

11. A notification system according to Claim 6, further including an indication unit coupled to said telephone network and being associated with the subscriber's telephone terminal, which unit is capable of identifying said notification and provide either or both of visual and audio indication signifying the existence of at least one new message.

12. A system according to Claim 6, wherein said notification server is operated to notify said subscriber via an automatic collect call central office which calls said subscriber with a request from the subscriber to accept a collect call including said notification.

13. A system according to Claim 6, wherein said e-mail notification server is operated to notify said subscriber via cellular telephone company computer which provides said subscriber a notification by means of cellular telephone associated with said subscriber.

14. A system according to Claim 6, wherein said server is capable of notifying said subscriber by means of facsimile machine.

15. A system according to Claim 6, wherein said notification server is operated to notify said recipient via a paging company computer which provides said recipient a notification on his pager.

16. A notification method for notifying of an existence of at least one new e-mail message addressed to a subscriber:

(i) invoking a sequence of at least one cycle; each cycle including placement of a telephone call having at least one ring to a telephone terminal associated with the subscriber and disconnecting of said call before bi-directional communication is established between said notification server and said telephone terminal; and

(ii) identifying said sequence and in response thereto to provide either or both of visual and audio indication signifying the existence of at least one new message.

17. A notification method for notifying of an existence of at least one new e-mail message addressed to a subscriber, including providing to said subscriber, through said telephone network, notification on the existence of at least one new e-mail message, substantially at no cost to said subscriber and to said notification server.

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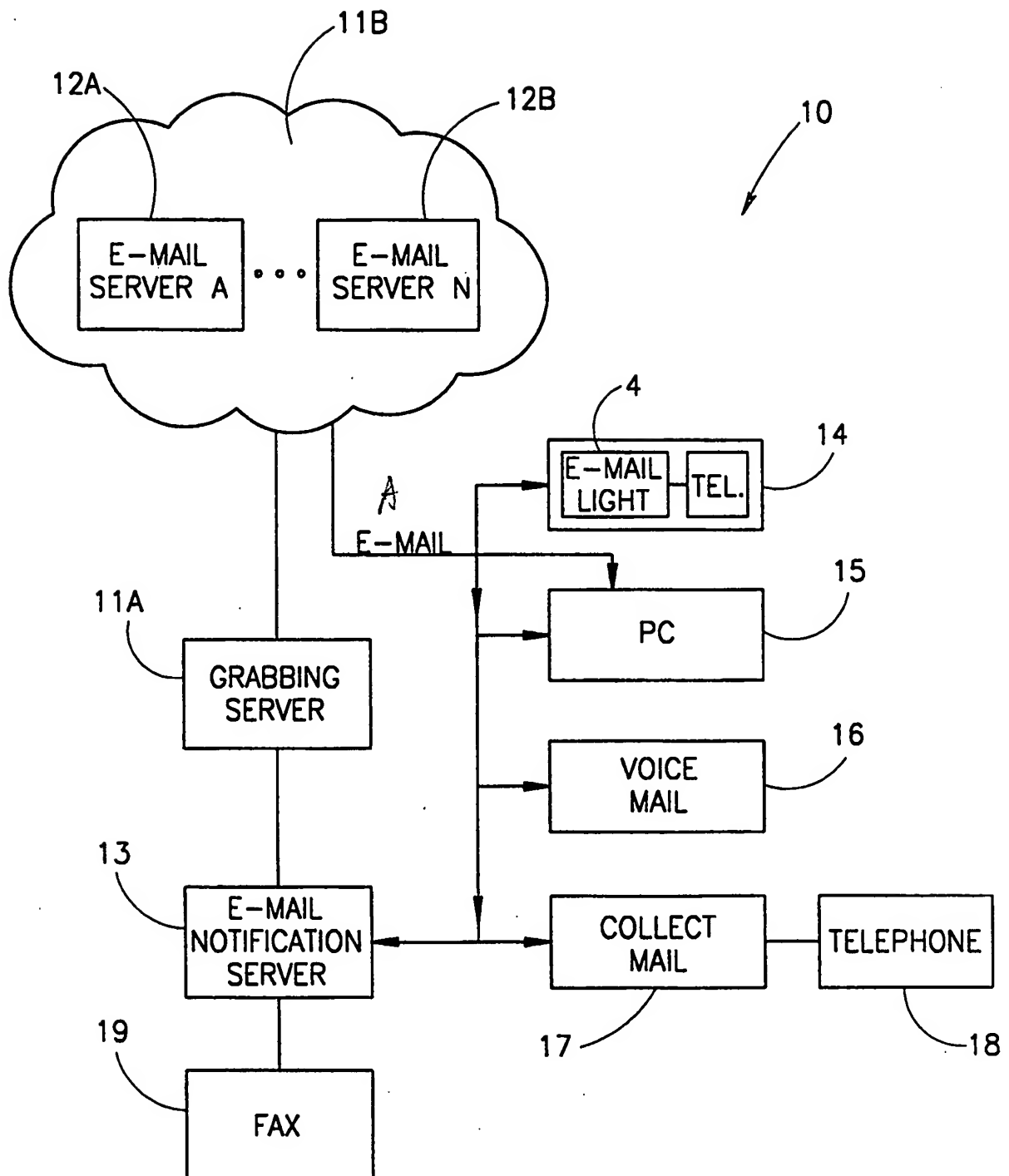


FIG.1

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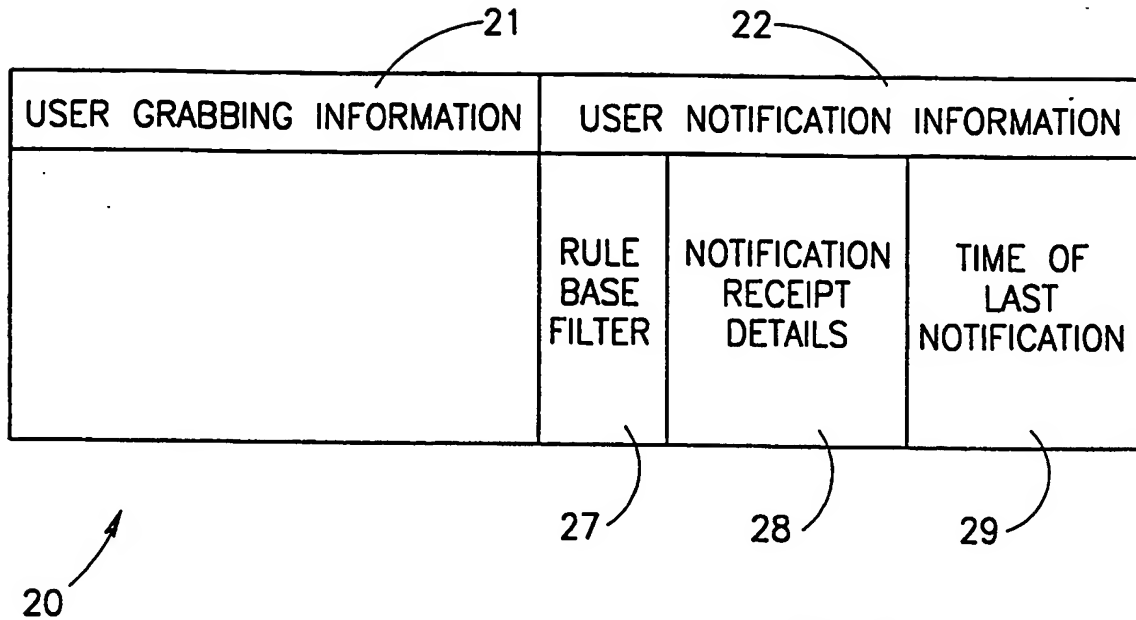


FIG.2

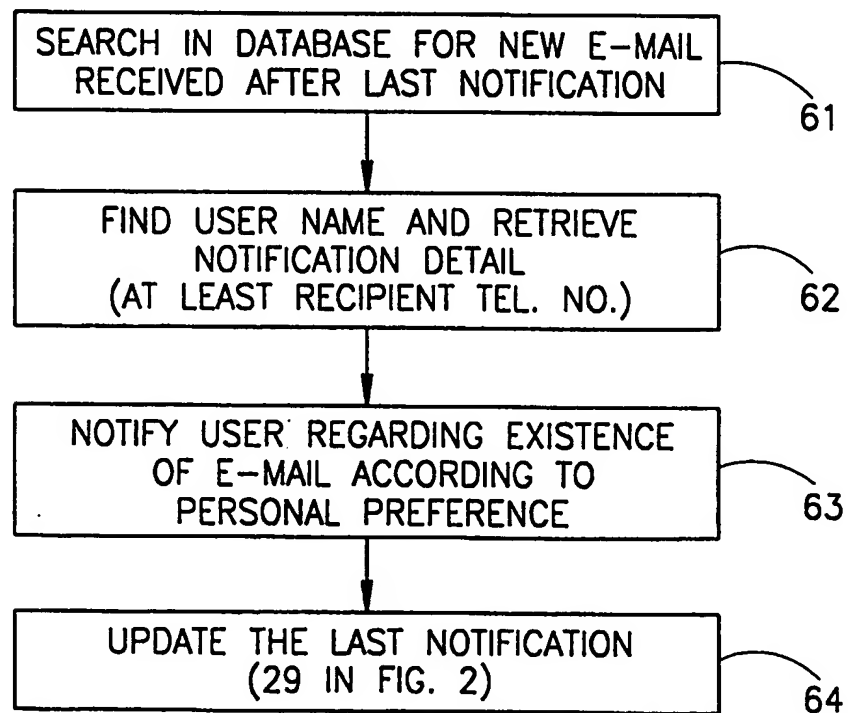


FIG.3

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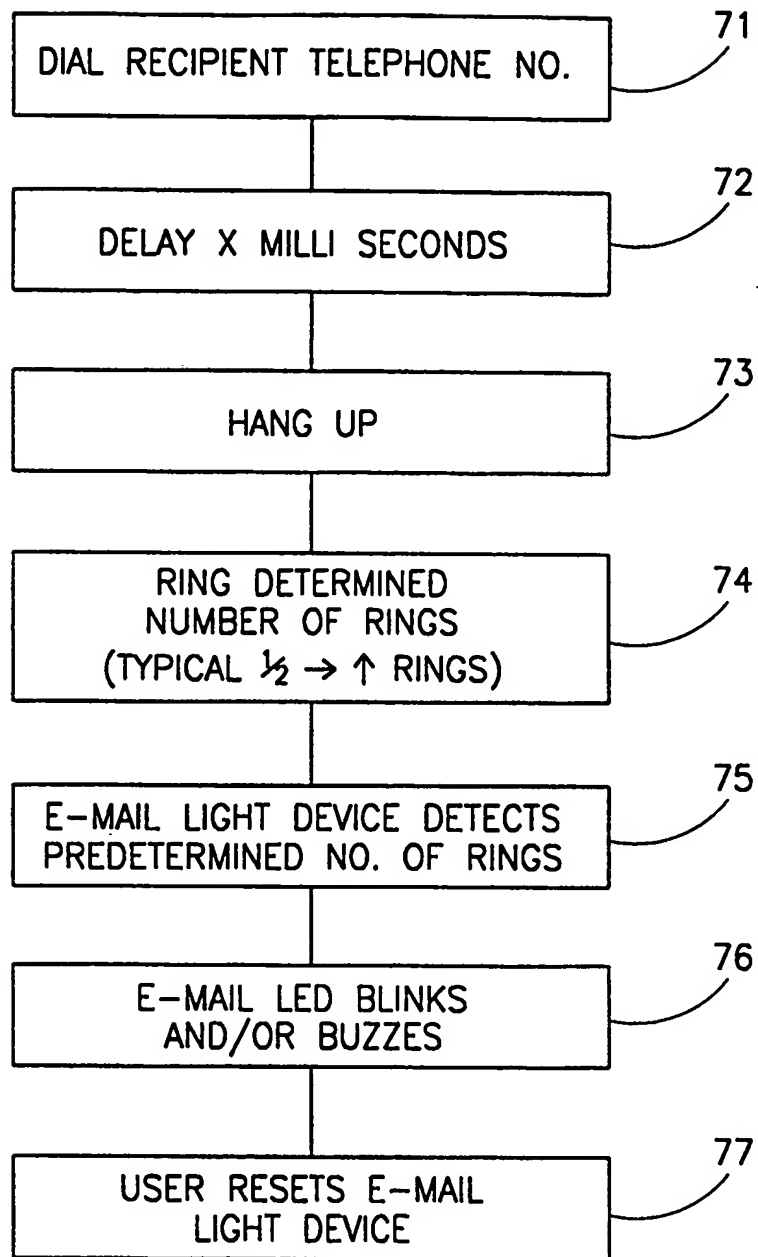


FIG.4

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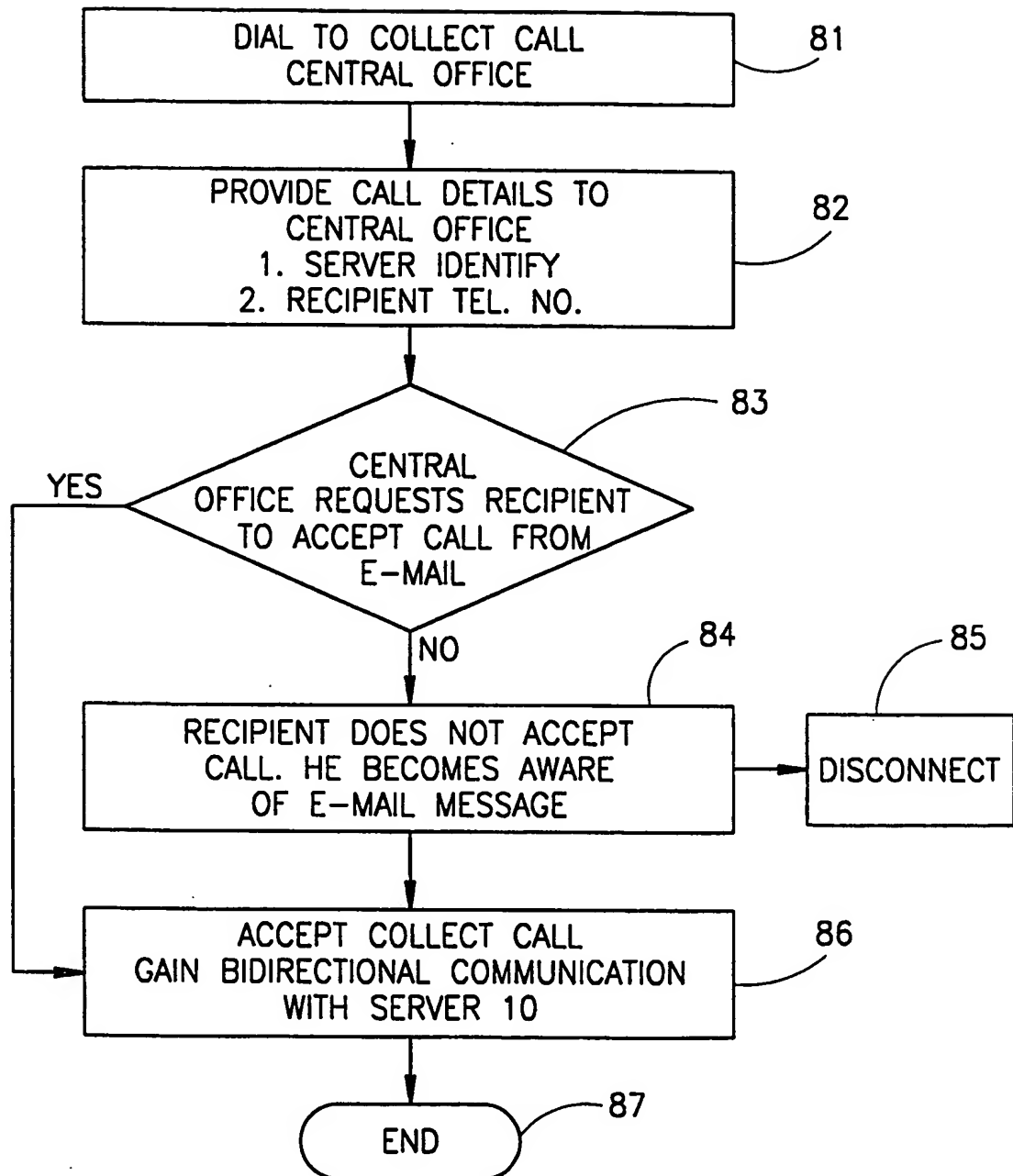


FIG.5

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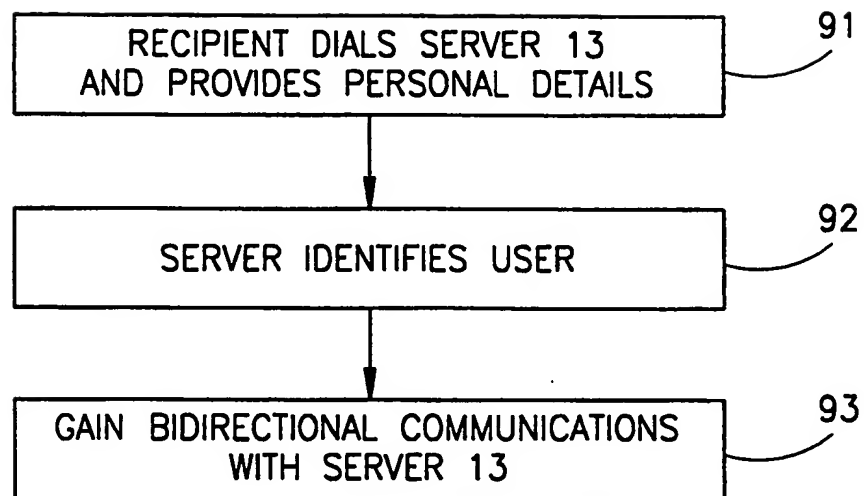


FIG.6

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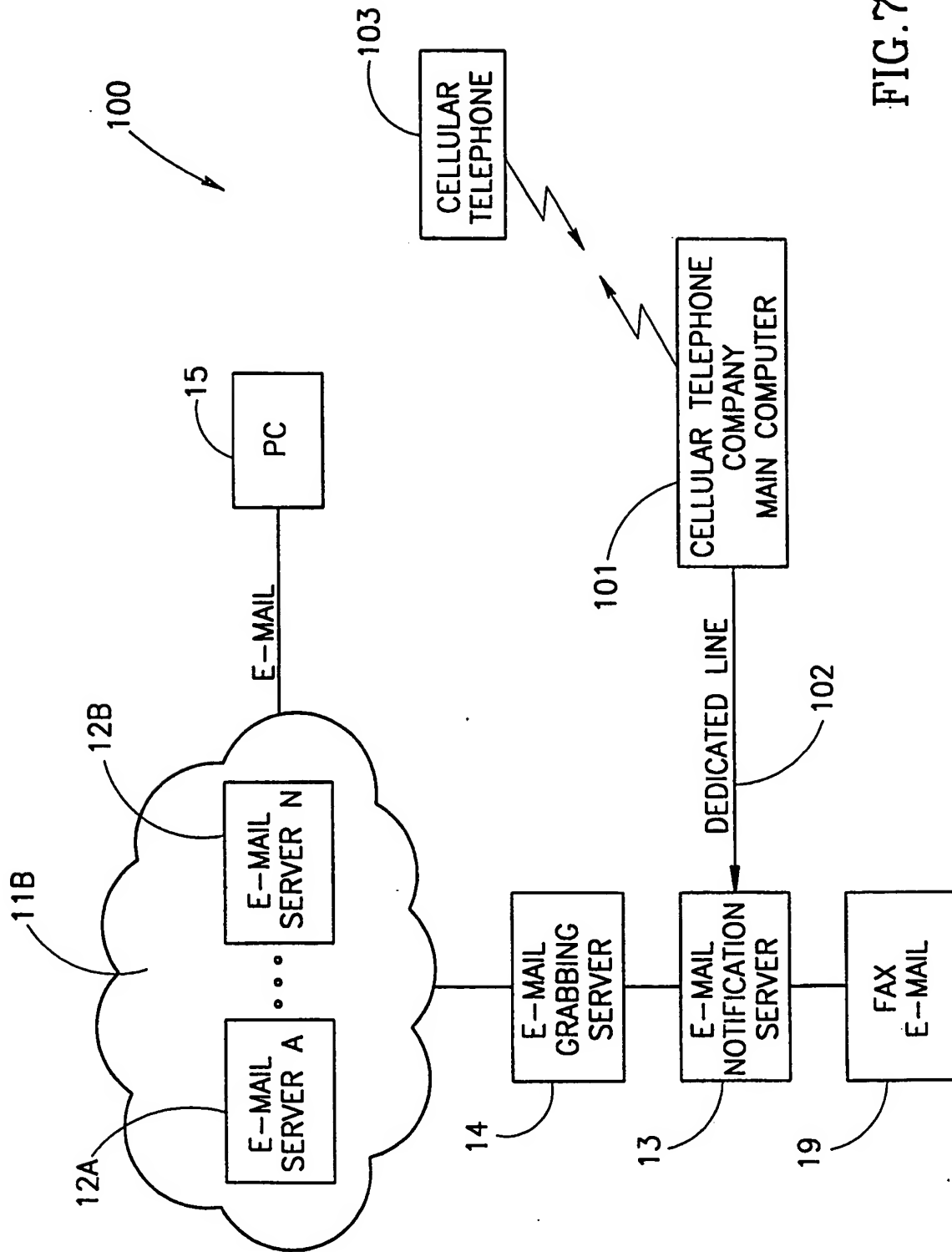


FIG. 7

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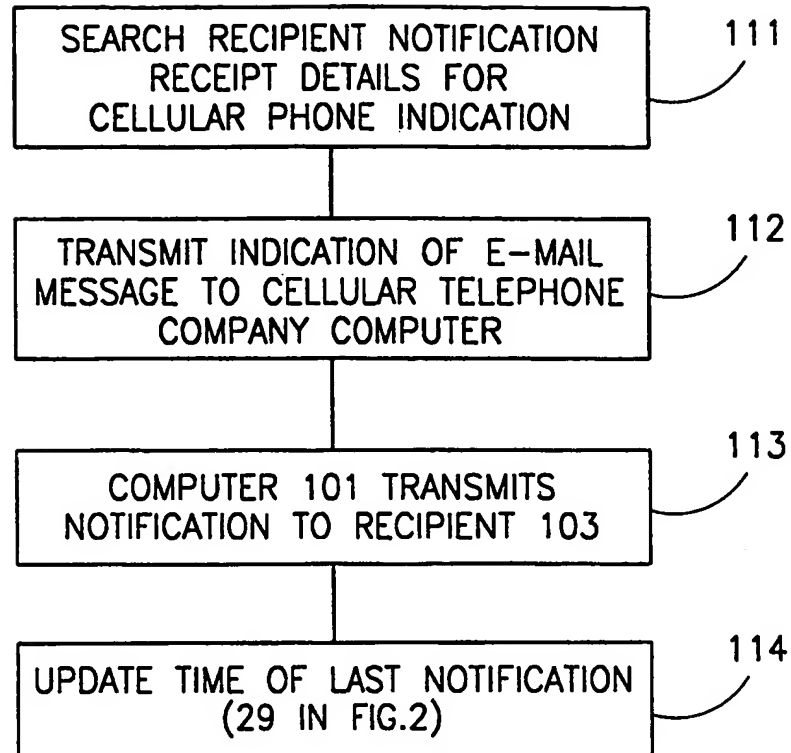


FIG.8

INTERNATIONAL SEARCH REPORT

Int. Application No

PCT/IL 98/00020

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 H04M3/50

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 H04M H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | EP 0 375 456 A (IBM) 27 June 1990 see figure 1 see column 3, line 13 - column 4, line 36 ---- | 1,3,4, 11,16,17 |
| A | US 5 138 653 A (LE CLERCQ PATRICK) 11 August 1992 see figures 1-3 see column 3, line 34 - column 4, line 68 ----- | 1-6,16, 17 |



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IL 98/00020

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---------------------|--|----------------------------------|
| EP 0375456 A | 27-06-90 | CA 1321841 A JP 2190058 A | 31-08-93 26-07-90 |
| US 5138653 A | 11-08-92 | WO 9003074 A EP 0386011 A JP 3502153 T | 22-03-90 12-09-90 16-05-91 |

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